CONSTRUCABILITY REVIEW CHECKLIST

Project No. Number **Control No.** Number

Project Description: Text

CR Name: Name **Date:** Date

I. GENERAL

( ) Is there a cheaper or faster way to accomplish the work or a method that has fewer conflicts with traffic?

( ) Provide work area, when practical.

( ) Provide access to work areas.

( ) Verify utility locations shown on the plans.

( ) Has utility construction been coordinated with other Agencies?

( ) Are all pay items shown in the bid tabulation covered by specifications?

( ) Is all work represented by pay items?

( ) Compare the quantities on the Schedule of Items with the quantities on the Summaries.

( ) Check to ensure the units of measurement used are the same on the Schedule of Items as they are on the Summary.

( ) Do the Summaries contain all the items they should?

( ) Verify that an item is called the same thing in the various locations on the plans. Is the terminology used here consistent with the Summaries and Schedule of Items?

( ) Has design considered access for routine maintenance?

( ) Can easements be economically obtained for temporary detours?

( ) Check and verify pavement widths for non-engineered overlay projects.

( ) Check existing pavement depth. If not available or cannot be visibly determined, consider requesting cores be taken for non-engineered overlay projects to verify pavement depth.

( ) Check erosion control plan for adequacy and use of cost effective BMP items.

( ) Has the design restricted or limited available construction means and/or methods?

( ) Is weather or time or year a critical factor?

( ) Are materials, including any special materials, available within a reasonable distance from the project?

( ) Are design elements standardized and consistent?

( ) Are Special Provisions clear, consistent with other specifications and constructible?

( ) Do you agree with the amount of contact time allowed?

( ) Has Pedestrian and ADA access been provided in the construction sequencing or staging?

II. EARTHWORK AND GRADING

( ) Review the mass diagram. Is the project balanced?

( ) Is borrow required?

( ) Is there a large excess of excavation?

( ) Are the individual balances long or short?

( ) Are there any bridges within the limits of the project? Does the mass diagram indicate hauling large quantities of dirt beyond the bridge?

( ) Review the Typical Sections. Does everything look reasonable?

( ) Does the Grading Summary agree with the mass diagram?

( ) How and where will trees and brush cleared and grubbed be disposed?

( ) Review Soil Survey information and verify that recommendations have been addressed in the design.

( ) Review Geotechnical Report and verify that recommendations have been addressed in the design.

( ) Check Resource Agency requirements for permits and other environmental issues.

( ) Is special slope treatment required? If yes, how is it measured and paid?

( ) Are structure removal limits clearly shown?

( ) Is blasting allowed and have local ordinances/laws been included?

( ) Are topsoil stockpile sites available within the R/W?

( ) Have areas that may restrict normal equipment use been eliminated or minimized?

( ) Can existing roadway materials be salvaged for other use?

( ) Should existing roadway material be wasted or used in the exterior roadway section so the existing roadway and PTW can be utilized until the new surface is completed?

( ) Is earthwork phasing compatible with other construction requirements?

( ) Do driveway and turnout grades meet allowable standards?

( ) Has shrink/swell factor been applied to earthwork tabulations and are they reasonable?

( ) For large earthwork quantity projects, is it necessary to apply a contingency quantity and has it been applied?

( ) For corridor projects, has an attempt been made to balance earthwork between several projects within the corridor?

( ) Has it been determined whether borrow or waste is the most economical?

( ) Are temporary overload crossings necessary and have they been designated?

( ) Has overload hauling through the project been considered for large earthwork volume projects?

( ) Pay special attention to whether specific materials types are available (where and when) during staged construction.

( ) What is the maximum road closure period for blasting and cleanup?

( ) Are rock cuts wide enough to accommodate standard construction equipment?

( ) Are roadway grading and fill widths compatible with standard construction equipment sizes?

( ) Is a local source available for shoulder build-up material?

( ) Can excavated rock be placed in the planned fills or will it need to be wasted elsewhere?

( ) Is sufficient quantity and quality of topsoil or planting material available for rock cuts?

( ) Is a topsoil source available that will meets specification requirements?

( ) Can slopes be planted using standard planting equipment? Steep slopes may require special treatment and/or equipment to plant.

( ) Any indication on the plans of ground water, springs or active stream flows?

( ) Have slopes been flattened to eliminate guardrail in heavy snow areas?

III. BASE AND SURFACING

( ) Review alternatives proposed for disposal of concrete and asphalt pavement.

( ) Are saw cutting limits specified?

( ) Are asphalt pavement removal widths compatible with typical removal equipment capabilities?

( ) Have low production and hand work areas been minimized?

( ) Are truck turn-around areas available?

( ) Can over-weight, over-width and over-length loads pass through the project?

( ) Can 100% milled AC be used for base course, backfill or shoulder gravel?

( ) Will the designed widening accommodate standard construction equipment?

( ) Are there any haul route restrictions through urban areas?

( ) Do the staging (phasing) plans provide for PCCP equipment clearances?

IV. STRUCTURES

( ) Verify accuracy of screed elevations and dead load camber.

( ) Verify that design pile tip elevations and ultimate pile capacities are specified.

( ) When Dynamic Load Testing is specified for piling, verify that the re-drive wait period is specified on the plans.

( ) When required, verify that the Drilled Shaft Special Provision is included.

( ) Verify that type, size and length of piling are specified and consistent.

( ) Are cutting shoes specified and included as pay items?

( ) Are any specified bridge aesthetic treatments constructible?

( ) Is the bridge skew excessive and can it be reduced?

( ) Are end bent and intermediate bent piling be standardized or can they be?

( ) Are pier shapes standardized?

( ) Are footing and wall shapes and heights uniform and consistent?

( ) Provide adequate end space for jacking post-tensioned bridges.

( ) Check rebar spacing over caps.

( ) Verify adequate work area has been provided around structures and retaining walls.

( ) Check access to structure site and has adequate area been provided for work bridges and access roads.

( ) Will minimum vertical clearance over traffic be adequate after falsework is placed?

( ) When applicable, check sign/light foundations on bridges for utility conflicts.

( ) Determine if temporary support will be required utility ducts and have they been designed/specified?

V. DRAINAGE FACILITIES AND PIPE CULVERTS

( ) Review drainage issues and Hydraulics recommendations for major drainage structures.

( ) Will drainage be perpetuated?

( ) Check Culvert Summaries against plan sheets and against the culvert recap summary.

( ) Are all utility conflicts identified on the plans?

( ) Has any underground construction work been coordinated and sequenced with the roadway work?

( ) Will soil conditions allow trenching?

( ) Has flowable fill been specified around underground utilities and culverts that cross existing or planned roadways?

( ) Has flowable fill been specified around the haunch of large pipe and between multiple installations?

( ) Is cast-in-place pipe construction compatible with soil conditions?

( ) Have multiple catch basins been used in sag vertical curves?

( ) Are catch basins standardized or can they be standardized?

( ) Is standard curb and gutter sections specified where feasible?

( ) Check for any utility conflicts with catch basins.

( ) Check to ensure catch basin location is in the gutter pan.

( ) Check roadway and culver grades to verify adequate cover.

( ) Check grades of drainage systems to verify slopes meet minimums for reducing silt.

( ) Are dikes and berms correctly placed to be effective and is there access?

( ) Are typical sections shown for dikes, berms and channels?

( ) Are there channel lining alternatives?

( ) Are linings needed and specified for detention/retention basins?

( ) Has drainage been considered and is it adequate for any temporary construction?

( ) Have ponding areas been considered at the upstream end of culverts?

( ) Has drainage been addressed for areas beyond the construction limits that may be impacted by the project?

( ) Verify that sidewalks on the bridge are justified. Required on one side or both sides?

( ) Have sidewalks transitions been designed to drain away from the bridge?

( ) Has drainage at the end of bridges been adequately addressed?

( ) Have minimum pipe sizes required for Maintenance cleanout been checked?

( ) Is riprap material locally available?

VI. UTILITIES

( ) Check driveway, sidewalk and ramp locations for conflicts with utilities.

( ) Check overhead utility clearance, especially near structures.

( ) Check for railroad involvement. Have RR Special Provisions been included?

VII. ENVIRONMENTAL CONSTRAINTS/PERMITS

( ) Do the Special Provisions include any environmental or permit constraints such as periods when work cannot take place in the waterway or time restrictions related to nesting birds?

( ) Obtain copies of environmental document and check commitments outlined in the document against the plans and specifications.

( ) If dewatering is required, have provisions been addressed for disposal of the waste water?

VIII. TRAFFIC CONTROL

( ) Is there a traffic control plan and sequence of operations? Does the sequence make sense? Does it fit the project?

( ) Can temporary barriers be flared to provide blunt end protection instead of using attenuators?

( ) Does detour design fit field conditions and allow adequate area for the planned work?

( ) Verify the need for a detour.

( ) Check vertical differentials for staged construction work adjacent to traffic lanes. Is shoring or cribbing required?

( ) Check to determine if adequate access has been provided for adjacent residences and businesses.

( ) Check possible traffic conflicts along potential haul roads.

( ) Check sign and light pole foundations for possible conflict with drainage facilities and guardrail.

( ) Verify locations of pull boxes and conduits to avoid potential conflicts.

IX. INCIDENTAL ITEMS

( ) Is existing embankment material suitable for guardrail post installation?

( ) Have fencing plans been checked for clarity and do they match the ROW Agreements?

( ) Is temporary fencing required and is the location specified?

( ) Has a concrete source been considered for small quantities on remote projects?

( ) Have the necessary Special Provisions been included to address each non-standard item or work?